

ProtoDUNE-SP Nearline Monitoring and Reco Resources

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DUNE FD Monitoring DAQ Resources

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ProtoDUNE-SP TPC Monitor

- `pdsp_decode_rawtpcmonitor.fcl`
- Runs FFT on each channel for all ticks
- Fills many histograms – mean, RMS, stuck-code fractions, FFT outputs.
- No data prep or reco, just works with `raw::RawDigit`
- Run 5177
 - Early in ProtoDUNE-SP run.
 - Cosmics, no beam
 - 6000 ticks/readout
 - 5 RCE APAs, 1 FELIX
 - Data compression is on

Raw TPC Monitor Timing and Memory for 107 Events

3.2 GHz Sandy Bridge computer

File read in with XROOTD

TimeTracker printout (sec)	Min	Avg	Max	Median	RMS	nEvts
Full event	63.2668	65.9039	69.2253	65.9073	1.25102	107
source:RootInput(read)	0.000246605	0.00216127	0.044818	0.000290627	0.00619726	107
produce:tpcrawdecoder:PDSPTPCRawDecoder	12.2442	12.4612	13.023	12.4478	0.108043	107
produce:ssprawdecoder:SSPRawDecoder	0.348713	0.465434	0.616108	0.457	0.0577776	107
produce:timingrawdecoder:TimingRawDecoder	0.000158398	0.000271454	0.00717752	0.000208973	0.000671065	107
[art]:TriggerResults:TriggerResultInserter	3.1513e-05	4.49916e-05	9.564e-05	4.603e-05	8.41417e-06	107
end_path:pdspnearlineheader:PDSPNearlineHeader	2.9823e-05	9.2194e-05	0.000485817	4.5746e-05	0.00010717	107
end_path:tpcmonitor:TpcMonitor	50.2528	52.6397	55.9962	52.6818	1.18846	107
end_path:sspmonitor:SSPMonitor	0.243746	0.334612	0.638843	0.325819	0.0524382	107

TimeReport ----- Time Summary ---[sec]----

TimeReport CPU = 6456.478151 Real = 7052.669342

MemReport ----- Memory Summary ---[base-10 MB]----

MemReport VmPeak = 1461.07 VmHWM = 915.087

Keepup Reco Logfile from May

Input: np04_raw_run007598_0012_dl10.root, taken 1 April 2019. 6000-tick cosmics

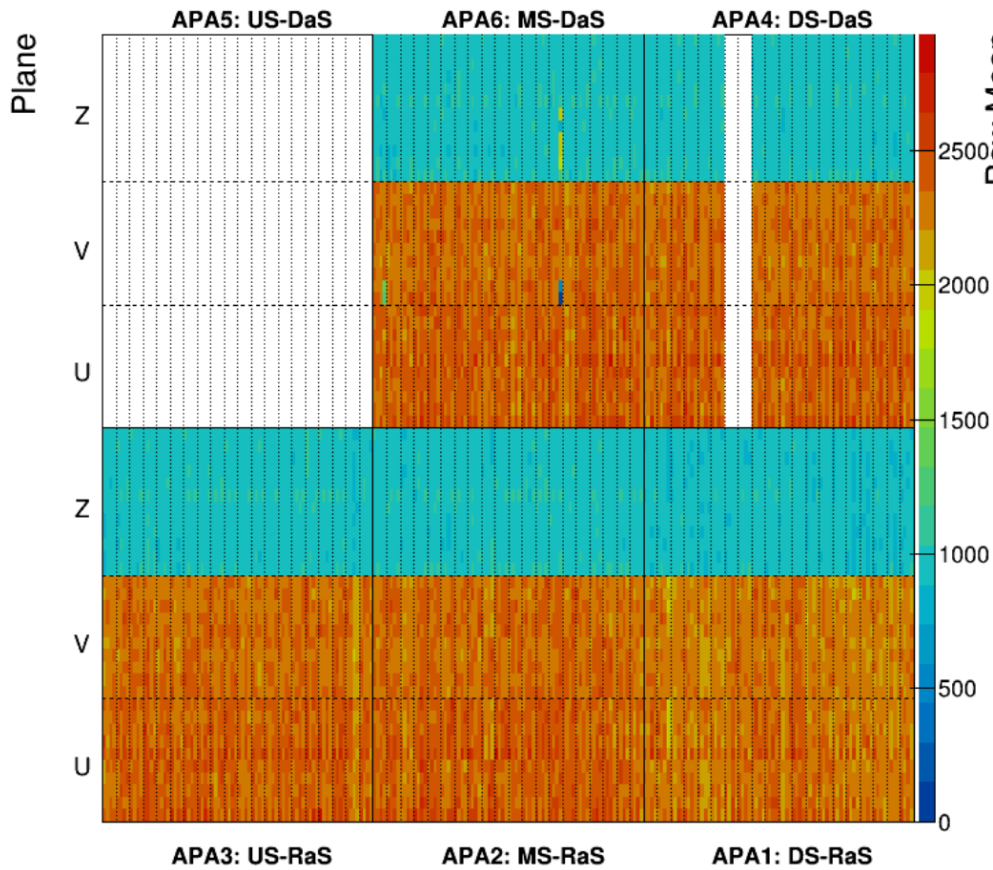
TimeTracker printout (sec)	Min	Avg	Max	Median	RMS	nEvts
Full event	293.189	2347.88	128830	408.168	15569.2	67
source:RootInput(read)	0.000396083	0.0113938	0.506462	0.00176986	0.0627766	67
decode:timingrawdecoder:TimingRawDecoder	0.00121477	0.0173505	0.279815	0.012234	0.0337415	67
decode:ssprawdecoder:SSPRawDecoder	0.0899028	1.19778	69.4091	0.159535	8.39643	67
decode:tpcrawdecoder:PDSPTPCRawDecoder	13.3144	15.8037	17.5109	15.804	0.797952	67
decode:ctbrawdecoder:PDSPECTBRawDecoder	0.000226273	0.00312954	0.0965877	0.000394096	0.0126881	67
decode:beamevent:BeamEvent	0.000515889	0.00119629	0.0134463	0.000871441	0.00158285	67
decode:caldata:DataPrepModule	56.0479	65.0132	76.4446	64.553	3.96972	67
decode:gaushit:GausHitFinder	16.3583	24.8248	132.26	22.5017	13.824	67
decode:reco3d:SpacePointSolver	3.63448	19.0578	260.262	10.1572	32.5343	67
decode:hitpdune:DisambigFromSpacePoints	10.8749	24.2046	356.634	18.1158	41.3137	67
decode:linecluster:LineCluster	1.36043	15.3056	864.034	2.25486	104.473	67
decode:pandora:StandardPandora	69.842	1950.41	122051	116.72	14783.4	67
decode:pandoraTrack:LArPandoraTrackCreation	8.06523	24.1898	407.686	16.6904	47.5254	67
decode:pandoraShower:LArPandoraShowerCreation	6.15672	17.1502	114.877	14.5691	13.3734	67
decode:pandoracalo:Calorimetry	2.5078	6.37614	105.195	4.27945	12.2772	67
decode:pandorapid:Chi2ParticleID	0.00326793	0.00732596	0.0752036	0.0060463	0.0086595	67
decode:pmtrack:PMAlgTrackMaker	58.5733	174.8	4311.53	106.455	509.946	67
decode:pmtrackcalo:Calorimetry	1.78549	6.24519	129.899	4.23953	15.3107	67
decode:pmtrackpid:Chi2ParticleID	0.00359306	0.0070263	0.0465884	0.00626294	0.00510208	67
decode:ophitInternal:OpHitFinder	0.00030808	0.000675142	0.0039019	0.00059256	0.000471595	67
decode:ophitExternal:OpHitFinder	0.00376863	0.0190326	0.460555	0.00518113	0.0675112	67
decode:opflashInternal:OpFlashFinder	0.000164353	0.000362814	0.00366482	0.000298523	0.000425409	67
decode:opflashExternal:OpFlashFinder	0.000924388	0.00151045	0.00473975	0.00145983	0.000469273	67
decode:TriggerResults:TriggerResultInserter	2.662e-05	4.08138e-05	0.00010501	3.8832e-05	1.12976e-05	67
end_path:out1:RootOutput	6.081e-06	8.94234e-06	1.8371e-05	8.39e-06	2.34055e-06	67
end_path:out1:RootOutput(write)	1.78458	3.23292	19.8574	2.84712	2.19047	67

MemoryTracker summary (base-10 MB units used)

Peak virtual memory usage (VmPeak) : 4171.22 MB
Peak resident set size usage (VmHWM): 2737.52 MB

A Basic Plot

Means for all channels:run009142_0051(taken on Tue Aug 6 13:14:16 2019)



RMS for all channels:run009142_0051(taken on Tue Aug 6 13:14:16 2019)

